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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/061,861	02/01/2002	R. Brad Campbell	PM 2000.097	2381

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EXAMINER	
LEE, JONG SUK	
ART UNIT	**PAPER NUMBER**
3673	

DATE MAILED: 04/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/061,861	CAMPBELL ET AL.
	Examiner	Art Unit
	Jong-Suk (James) Lee	3673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *39-43 and 46-84* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *39-43,46-52,54,56-68,70 and 72-84* is/are rejected.

7)☒ Claim(s) *53,55,69 and 71* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 17, 2004 has been entered.

2. The amendment filed February 17, 2004 has been entered.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 39-42, 46-50, 57 and 62 are rejected under 35 U.S.C. 102(b) as being anticipated by Davies et al (US 5,758,990).

Davies et al discloses a riser tensioning device comprising of: at least one buoyancy element/buoyancy can (16); a frame/yoke/guide frame (24, 54) comprising a plurality of vertical tubular members (14) externally disposed to a plurality of buoyancy elements (22) by enclosing the buoyancy elements and the frame/yoke comprising a plurality of connectors (24) securing the vertical members to a riser stem pipe (12), the riser stem pipe secured to a riser (18), the one or

more connectors (24) having a radial arms (A) (see Fig. 3) with a plate, the frame further comprising at least one horizontal bracing member (B) external to the buoyancy member (16); one or more gas service lines (36) positioned within the frame and enter the buoyancy can (16) and the frame/yoke with guide frame extending the vertical length of the at least one buoyancy element in spaced apart relationships (see Figs. 1-6; col.2, lines 23-67; col.3, lines 1-53; col.4, lines 1-4).

Although Davies et al is silent with respect to the frame's structural function of carrying loads exerted by external force, such as wave and/or current action in the water and , it is believed to be inherent that Davies et al's frame protect the riser from external loads of wave or current action in the water while being in use.

Further, in the apparatus claim, patentable weight is not given to the merely functional limitation, such as "the frame is constructed to carry loads exerted by external forces" in claim 46.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 62-64 are rejected under 35 U.S.C. 102(e) as being anticipated by Nish et al (US 6,448,447).

Nish et al discloses a buoyancy system for a riser and a deep water floating platform comprising a plurality of buoyancy elements (58), a continuous external frame (112) around the plurality of buoyancy elements (58) being arranged in series along the length, the external frame secured to the riser (46) to allow buoyancy to be transferred to the riser for eliminating buckling/stiffness discontinuity along the buoyancy system (col.1, lines 61-63), the external frame comprising a plurality of external frame sections forming the continuous external frame as depicted in Fig. 3 (see col.3, lines 37-67; col.4, lines 1-44; col.6, lines 25-67).

7. Claims 39-43, 46-48, 50-52, 54, 56, 57-59, 62-68, 70,72-81 are rejected under 35 U.S.C. 102(e) as being anticipated by Nish et al'112 (US 6,632,112).

Nish et al discloses a buoyancy module system for a deep-water risers of a deep water floating platform comprising: a plurality of buoyancy elements/buoyancy can or vessel (112) and buoyant cladding member (124) made of syntactic foam, a continuous external frame (100), which may be hollow tubular members and neutrally or positively buoyant in the water (see col.9, lines 4-34) around the plurality of buoyancy elements (112) extending to the vertical length of the buoyancy element, the external frame secured to the riser (46) or indirectly secured to the riser through a stem pipe (78) to allow buoyancy to be transferred to the riser for carrying loads exerted by external forces and eliminating buckling/stiffness discontinuity along the buoyancy system, the external frame comprising a plurality of external frame sections forming the continuous external frame (see Fig. 6), the frame having a lower external frame section and higher external frame section, each sections having a lower and higher mating elements (176, 178) being connected together (see Fig. 10) and a plurality of connectors with a radial arm

having a first connector positioned above the buoyancy element and a second connector positioned below the buoyancy element (see Figs. 2 and 4) and one or more connectors (104a) positioned between the first and second connector, a horizontal bracing member (104b) being external to the buoyancy element and radially arched as depicted in Fig.6 (see Figs. 1-14; col.6, lines 13-67; col.7, lines 1-67; col.8, lines 1-67; col.9, lines 1-35; col.11, lines 4-59).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davies et al in view of Johnson (US 4,477,207). The teachings of Davies al. have been discussed above.

However, Davies et al fails to disclose or fairly suggest the buoyancy element being syntactic foam. Johnson discloses a marine riser buoyancy assembly including a buoyancy element (10) being made of syntactic foam (see Figs. 1-2; col.3, lines 40-64).

Therefore, in view of Johnson, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to replace the buoyancy can of Davies et al with the syntactic foam material in order to reduce the manufacturing cost without having associated parts for providing the air/gas supply to the buoyancy can of Davies et al.

10. Claims 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nish et al'112 in view of Johnson (US 4,477,207). The teachings of Nish et al'112 have been discussed above.

However, Nish et al'112 fails to disclose or fairly suggest the buoyancy element being syntactic foam. Johnson discloses a marine riser buoyancy assembly including a buoyancy element (10) being made of syntactic foam (see Figs. 1-2; col.3, lines 40-64).

Therefore, in view of Johnson, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to replace the buoyancy can of Nish et al'112 with the syntactic foam material in order to reduce the manufacturing cost without having associated parts for providing the air/gas supply to the buoyancy can of Nish et al'112.

11. Claims 60-61 and 82-84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nish et al'112 in view of Hale et al (US 4,422,801). The teachings of Nish et al'112 have been discussed above.

However, Nish et al'112 fails to disclose or fairly suggest the gas service line entering at the bottom of the buoyancy can. Hale et al discloses a buoyancy system for the underwater riser comprising a buoyancy can (24), a gas/air service (13) line being connected to the bottom of the buoyancy can as depicted in Fig. 3 (see Figs. 1-5; col.4, lines 44-68; col.5, lines 1-65).

Therefore, in view of Hale et al, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to efficiently provide the compressed gas or air, which is lighter than the ambient pressure, to the buoyancy can by closing the top portion of the buoyancy can.

Response to Arguments

12. Applicant's arguments with respect to claim 39 in remarks of the amendment filed February 17, 2004 and the interview conducted on April 13, 2004 that Davies et al reference does not disclose the vertical members, which are externally disposed to the buoyancy element, extends the vertical length of the buoyancy element.

However, it is not persuasive because Davies et al teaches the vertical members of the yoke and guide frames also externally being disposed on the buoyancy elements and extending to the vertical length of the buoyancy elements with being spaced apart as mentioned in col.3, lines 35-42.

With respect to newly added independent claim 62, it is understood that the plurality of buoyancy elements in side-by-side structural relationships within the continuous external frame. It is noted that the discussion conducted in the interview was regarding only the independent claim 39 which has been pending in the application.

Allowable Subject Matter

13. Claims 53, 55, 69 and 71 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the

base claim and any intervening claims.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Other references cited disclose a inflatable buoyancy near surface riser disconnect system and a multiple tendon compliant tower construction.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jong-Suk (James) Lee whose telephone number is (703) 308-6777. The examiner can normally be reached on 6:30 am to 3:00 pm, Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather C. Shackelford, can be reached on (703) 308-2978. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

J. Lee /jjl
April 14, 2004

Jong-Suk (James) Lee
Primary Examiner
Art Unit 3673

Attachment: Fig. 3 of Davies et al. (US 5,758,990)